SEQUENCE LISTING

<110> Zhou, Ming-Ming
Aggarwal, Aneel

<120> Methods of Identifying Modulators of Bromodomains

<130> 2459-1-003

<140> 09/510,314
<141> 2000-02-22

<160> 44

<170> PatentIn version 3.0

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        35                  40                  45

Ser Gly Ala Cys Gly Pro Ala Thr Ala Val Ala Ala Ala Gly Thr Ala
    50                  55                  60

Glu Gly Pro Gly Gly Gly Gly Ser Ala Arg Ile Ala Val Lys Lys Ala
65                  70                  75                  80

Gln Leu Arg Ser Ala Pro Arg Ala Lys Lys Leu Glu Lys Leu Gly Val
                85                  90                  95

Tyr Ser Ala Cys Lys Ala Glu Glu Ser Cys Lys Cys Asn Gly Trp Lys
            100                 105                 110

Asn Pro Asn Pro Ser Pro Thr Pro Pro Arg Ala Asp Leu Gln Gln Ile
        115                 120                 125

Ile Val Ser Leu Thr Glu Ser Cys Arg Ser Cys Ser His Ala Leu Ala
    130                 135                 140

Ala His Val Ser His Leu Glu Asn Val Ser Glu Glu Glu Met Asn Arg
145                 150                 155                 160

Leu Leu Gly Ile Val Leu Asp Val Glu Tyr Leu Phe Thr Cys Val His
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Lys Glu Glu Asp Ala Asp Thr Lys Gln Val Tyr Phe Tyr Leu Phe Lys
            180                 185                 190

Leu Leu Arg Lys Ser Ile Leu Gln Arg Gly Lys Pro Val Val Glu Gly
        195                 200                 205

Ser Leu Glu Lys Lys Pro Pro Phe Glu Lys Pro Ser Ile Glu Gln Gly
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Val Asn Asn Phe Val Gln Tyr Lys Phe Ser His Leu Pro Ala Lys Glu
225                 230                 235                 240

Arg Gln Thr Ile Val Glu Leu Ala Lys Met Phe Leu Asn Arg Ile Asn
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Tyr Trp His Leu Glu Ala Pro Ser Gln Arg Arg Leu Arg Ser Pro Asn
260 265 270

Asp Asp Ile Ser Gly Tyr Lys Glu Asn Tyr Thr Arg Trp Leu Cys Tyr
275 280 285

Cys Asn Val Pro Gln Phe Cys Asp Ser Leu Pro Arg Tyr Glu Thr Thr
290 295 300

Gln Val Phe Gly Arg Thr Leu Leu Arg Ser Val Phe Thr Val Met Arg
305 310 315 320

Arg Gln Leu Leu Glu Gln Ala Arg Gln Glu Lys Asp Lys Leu Pro Leu
325 330 335

Glu Lys Arg Thr Leu Ile Leu Thr His Phe Pro Lys Phe Leu Ser Met
340 345 350

Leu Glu Glu Glu Val Tyr Ser Gln Asn Ser Pro Ile Trp Asp Gln Asp
355 360 365

Phe Leu Ser Ala Ser Ser Arg Thr Ser Gln Leu Gly Ile Gln Thr Val
370 375 380

Ile Asn Pro Pro Pro Val Ala Gly Thr Ile Ser Tyr Asn Ser Thr Ser
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Ser Ser Leu Glu Gln Pro Asn Ala Gly Ser Ser Ser Pro Ala Cys Lys
405 410 415

Ala Ser Ser Gly Leu Glu Ala Asn Pro Gly Glu Lys Arg Lys Met Thr
420 425 430

Asp Ser His Val Leu Glu Glu Ala Lys Lys Pro Arg Val Met Gly Asp
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Ile Pro Met Glu Leu Ile Asn Glu Val Met Ser Thr Ile Thr Asp Pro
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Ala Ala Met Leu Gly Pro Glu Thr Asn Phe Leu Ser Ala His Ser Ala
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Arg Asp Glu Ala Ala Arg Leu Glu Glu Arg Arg Gly Val Ile Glu Phe
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Met Trp Leu Val Gly Leu Gln Asn Val Phe Ser His Gln Leu Pro Arg
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Met Pro Lys Glu Tyr Ile Thr Arg Leu Val Phe Asp Pro Lys His Lys
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Thr Leu Ala Leu Ile Lys Asp Gly Arg Val Ile Gly Gly Ile Cys Phe
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Arg Met Phe Pro Ser Gln Gly Phe Thr Glu Ile Val Phe Cys Ala Val
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Thr Ser Asn Glu Gln Val Lys Gly Tyr Gly Thr His Leu Met Asn His
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Leu Lys Glu Tyr His Ile Lys His Asp Ile Leu Asn Phe Leu Thr Tyr
        595                 600                 605

Ala Asp Glu Tyr Ala Ile Gly Tyr Phe Lys Lys Gln Gly Phe Ser Lys
    610                 615                 620

Glu Ile Lys Ile Pro Lys Thr Lys Tyr Val Gly Tyr Ile Lys Asp Tyr
625                 630                 635                 640

Glu Gly Ala Thr Leu Met Gly Cys Glu Leu Asn Pro Arg Ile Pro Tyr
                645                 650                 655

Thr Glu Phe Ser Val Ile Ile Lys Lys Gln Lys Glu Ile Ile Lys Lys
            660                 665                 670

Leu Ile Glu Arg Lys Gln Ala Gln Ile Arg Lys Val Tyr Pro Gly Leu
        675                 680                 685

Ser Cys Phe Lys Asp Gly Val Arg Gln Ile Pro Ile Glu Ser Ile Pro
    690                 695                 700

Gly Ile Arg Glu Thr Gly Trp Lys Pro Ser Gly Lys Glu Lys Ser Lys
705                 710                 715                 720

Glu Pro Arg Asp Pro Asp Gln Leu Tyr Ser Thr Leu Lys Ser Ile Leu
                725                 730                 735

Gln Gln Val Lys Ser His Gln Ser Ala Trp Pro Phe Met Glu Pro Val
            740                 745                 750

Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Phe Pro Met
        755                 760                 765

Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr Val Ser
    770                 775                 780

Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn Cys Lys
785                 790                 795                 800

Glu Tyr Asn Ala Ala Glu Ser Glu Tyr Tyr Lys Cys Ala Asn Ile Leu
                805                 810                 815

Glu Lys Phe Phe Phe Ser Lys Ile Lys Glu Ala Gly Leu Ile Asp Lys
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<220>
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<222> (2)..(4)
<223> Xaa is a maximum of three amino acids. Each of these can be any amino acid. One may be missing.

<220>
<221> Xaa
<222> (4)..(11)
<223> Xaa is a maximum of eight amino acids. Each of these can be

any amino acid. One, two, or three may be missing.

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<221> Xaa
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<223> Xaa is a single amino acid that is either Pro, Lys, or His.

<220>
<221> Xaa
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<223> Xaa is any single amino acid.

<220>
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<220>
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<400> 4

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<210> 5
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<213> Artificial Sequence

<220>
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<220>
<221> Xaa
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<223> Xaa represents an acetyl lysine.

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1 5 10

<210> 6
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<400> 6

Gln Ser Thr Ser Arg His Lys Xaa Leu Met Phe Lys Thr Glu
1 5 10

<210> 7
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<213> Homo sapiens, bromodomain peptide

<400> 7

Ser Lys Glu Pro Arg Asp Pro Asp Gln Leu Tyr Ser Thr Leu Lys Ser
1 5 10 15

Ile Leu Gln Gln Val Lys Ser His Gln Ser Ala Trp Pro Phe Met Glu
20 25 30

Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Ser
35 40 45

Pro Met Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr
50 55 60

Val Ser Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn
65 70 75 80

Cys Lys Glu Tyr Asn Ala Pro Glu Ser Glu Tyr Tyr Lys Cys Ala Asn
85 90 95

Ile Leu Glu Lys Phe Phe Phe Ser Lys Ile Lys Glu Ala Gly
100 105 110

<210> 8
<211> 110

<212> PRT
<213> Homo sapiens

<400> 8

Gly Lys Glu Leu Lys Asp Pro Asp Gln Leu Tyr Thr Thr Leu Lys Asn
1 5 10 15

Leu Leu Ala Gln Ile Lys Ser His Pro Ser Ala Trp Pro Phe Met Glu
20 25 30

Pro Val Lys Lys Ser Glu Ala Pro Asp Tyr Tyr Glu Val Ile Arg Phe
35 40 45

Pro Ile Asp Leu Lys Thr Met Thr Glu Arg Leu Arg Ser Arg Tyr Tyr
50 55 60

Val Thr Arg Lys Leu Phe Val Ala Asp Leu Gln Arg Val Ile Ala Asn
65 70 75 80

Cys Arg Glu Tyr Asn Pro Pro Asp Ser Glu Tyr Cys Arg Cys Ala Ser
85 90 95

Ala Leu Glu Lys Phe Phe Tyr Phe Lys Leu Lys Glu Gly Gly
100 105 110

<210> 9
<211> 109
<212> PRT
<213> Tetrahymena thermophila

<400> 9

Leu Lys Lys Ser Lys Glu Arg Ser Phe Asn Leu Gln Cys Ala Asn Val
1 5 10 15

Ile Glu Asn Met Lys Arg His Lys Gln Ser Trp Pro Phe Leu Asp Pro
20 25 30

Val Asn Lys Asp Asp Val Pro Asp Tyr Tyr Asp Val Ile Thr Asp Pro
35 40 45

Ile Asp Ile Lys Ala Ile Glu Lys Lys Leu Gln Asn Asn Gln Tyr Val
50 55 60

Asp Lys Asp Gln Phe Ile Lys Asp Val Lys Arg Ile Phe Thr Asn Ala
65 70 75 80

Lys Ile Tyr Asn Gln Pro Asp Thr Ile Tyr Tyr Lys Ala Ala Lys Glu
85 90 95

Leu Glu Asp Phe Val Glu Pro Tyr Leu Thr Lys Leu Lys
100 105

<210> 10
<211> 109
<212> PRT
<213> Saccharomyces cerevisiae

<400> 10

Ala Gln Arg Pro Lys Arg Gly Pro His Asp Ala Ala Ile Gln Asn Ile

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1               5                   10                  15

Leu Thr Glu Leu Gln Asn His Ala Ala Ala Trp Pro Phe Leu Gln Pro
            20                  25                  30

Val Asn Lys Glu Glu Val Pro Asp Tyr Tyr Asp Phe Ile Lys Glu Pro
        35                  40                  45

Met Asp Leu Ser Thr Met Glu Ile Lys Leu Glu Ser Asn Lys Tyr Gln
    50                  55                  60

Lys Met Glu Asp Phe Ile Tyr Asp Ala Arg Leu Val Phe Asn Asn Cys
65                  70                  75                  80

Arg Met Tyr Asn Gly Glu Asn Thr Ser Tyr Tyr Lys Tyr Ala Asn Arg
                85                  90                  95

Leu Glu Lys Phe Phe Asn Asn Lys Val Lys Glu Ile Pro
            100                 105


<210>  11
<211>  112
<212>  PRT
<213>  Homo sapiens

<400>  11

Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr
1               5                   10                  15

Leu Glu Ala Leu Tyr Arg Gln Asp Pro Glu Ser Leu Pro Phe Arg Gln
            20                  25                  30

Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
        35                  40                  45

Lys Ser Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
    50                  55                  60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Ile Trp Leu Met Phe
65                  70                  75                  80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Tyr
                85                  90                  95

Cys Ser Lys Leu Ser Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
            100                 105                 110


<210>  12
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<212>  PRT
<213>  Homo sapiens

<400>  12

Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr
1               5                   10                  15

Leu Glu Ala Leu Tyr Arg Gln Asp Pro Glu Ser Leu Pro Phe Arg Gln
            20                  25                  30

Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
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        35                  40                  45

Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
    50                  55                  60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Trp Leu Met Phe
65                  70                  75                  80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe
                85                  90                  95

Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
            100                 105                 110


<210>  13
<211>  112
<212>  PRT
<213>  Mus musculus

<400>  13

Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr
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Leu Glu Ala Leu Tyr Arg Gln Asp Pro Glu Ser Leu Pro Phe Arg Gln
            20                  25                  30

Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
        35                  40                  45

Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
    50                  55                  60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Arg Leu Met Phe
65                  70                  75                  80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe
                85                  90                  95

Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
            100                 105                 110


<210>  14
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<212>  PRT
<213>  Caenorhabditis elegans

<400>  14

Asp Thr Val Phe Ser Gln Glu Asp Leu Ile Lys Phe Leu Leu Pro Val
1               5                   10                  15

Trp Glu Lys Leu Asp Lys Ser Glu Asp Ala Ala Pro Phe Arg Val Pro
            20                  25                  30

Val Asp Ala Lys Leu Leu Asn Ile Pro Asp Tyr His Glu Ile Ile Lys
        35                  40                  45

Arg Pro Met Asp Leu Glu Thr Val His Lys Lys Leu Tyr Ala Gly Gln
    50                  55                  60

Tyr Gln Asn Ala Gly Gln Phe Cys Asp Asp Ile Trp Leu Met Leu Asp
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65 70 75 80

Asn Ala Trp Leu Tyr Asn Arg Lys Asn Ser Lys Val Tyr Lys Tyr Gly
85 90 95

Leu Lys Leu Ser Glu Met Phe Val Ser Glu Met Asp Pro Val Met
100 105 110

<210> 15
<211> 110
<212> PRT
<213> Homo sapiens

<400> 15

Arg Arg Arg Thr Asp Pro Met Val Thr Leu Ser Ser Ile Leu Glu Ser
1 5 10 15

Ile Ile Asn Asp Met Arg Asp Leu Pro Asn Thr Tyr Pro Phe His Thr
20 25 30

Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg
35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr
50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn
65 70 75 80

Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser Gln
85 90 95

Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu
100 105 110

<210> 16
<211> 110
<212> PRT
<213> Mesocricetus auratus

<400> 16

Arg Arg Arg Thr Asp Pro Met Val Thr Leu Ser Ser Ile Leu Glu Ser
1 5 10 15

Ile Ile Asn Asp Met Arg Asp Leu Pro Asn Thr Tyr Pro Phe His Thr
20 25 30

Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg
35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr
50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn
65 70 75 80

Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser Gln
85 90 95

Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu

100 105 110

<210> 17
<211> 111
<212> PRT
<213> Homo sapiens

<400> 17

Leu Leu Asp Asp Asp Asp Gln Val Ala Phe Ser Phe Ile Leu Asp Asn
1 5 10 15

Ile Val Thr Gln Lys Met Met Ala Val Pro Asp Ser Trp Pro Phe His
20 25 30

His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val
35 40 45

Asn Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys
50 55 60

Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala
65 70 75 80

Asn Ser Val Lys Tyr Asn Gly Pro Glu Ser Gln Tyr Thr Lys Thr Ala
85 90 95

Gln Glu Ile Val Asn Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp
100 105 110

<210> 18
<211> 111
<212> PRT
<213> Mesocricetus auratus

<400> 18

Leu Leu Asp Asp Asp Asp Gln Val Ala Phe Ser Phe Ile Leu Asp Asn
1 5 10 15

Ile Val Thr Gln Lys Met Met Ala Val Pro Asp Ser Trp Pro Phe His
20 25 30

His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val
35 40 45

Ser Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys
50 55 60

Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala
65 70 75 80

Asn Ser Val Lys Tyr Asn Gly Ser Glu Ser Gln Tyr Thr Lys Thr Ala
85 90 95

Gln Glu Ile Val Asn Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp
100 105 110

<210> 19
<211> 111
<212> PRT

<213> Homo sapiens

<400> 19

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Lys Pro Gly Arg Val Thr Asn Gln Leu Gln Tyr Leu His Lys Val Val
1               5                   10                  15

Met Lys Ala Leu Trp Lys His Gln Phe Ala Trp Pro Phe Arg Gln Pro
            20                  25                  30

Val Asp Ala Val Lys Leu Gly Leu Pro Asp Tyr His Lys Ile Ile Lys
        35                  40                  45

Gln Pro Met Asp Met Gly Thr Ile Lys Arg Arg Leu Glu Asn Asn Tyr
    50                  55                  60

Tyr Trp Ala Ala Ser Glu Cys Met Gln Asp Phe Asn Thr Met Phe Thr
65                  70                  75                  80

Asn Cys Tyr Ile Tyr Asn Lys Pro Thr Asp Asp Ile Val Leu Met Ala
                85                  90                  95

Gln Thr Leu Glu Lys Ile Phe Leu Gln Lys Val Ala Ser Met Pro
            100                 105                 110
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<210> 20
<211> 111
<212> PRT
<213> Homo sapiens

<400> 20

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Lys Pro Gly Arg Lys Thr Asn Gln Leu Gln Tyr Met Gln Asn Val Val
1               5                   10                  15

Val Lys Thr Leu Trp Lys His Gln Phe Ala Trp Pro Phe Tyr Gln Pro
            20                  25                  30

Val Asp Ala Ile Lys Leu Asn Leu Pro Asp Tyr His Lys Ile Ile Lys
        35                  40                  45

Asn Pro Met Asp Met Gly Thr Ile Lys Lys Arg Leu Glu Asn Asn Tyr
    50                  55                  60

Tyr Trp Ser Ala Ser Glu Cys Met Gln Asp Phe Asn Thr Met Phe Thr
65                  70                  75                  80

Asn Cys Tyr Ile Tyr Asn Lys Pro Thr Asp Asp Ile Val Leu Met Ala
                85                  90                  95

Gln Ala Leu Glu Lys Ile Phe Leu Gln Lys Val Ala Gln Met Pro
            100                 105                 110
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<210> 21
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<212> PRT
<213> Drosophila melanogaster

<400> 21

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Arg Pro Gly Arg Asn Thr Asn Gln Leu Gln Tyr Leu Ile Lys Thr Val
1               5                   10                  15
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Met Lys Val Ile Trp Lys His His Phe Ser Trp Pro Phe Gln Gln Pro
20 25 30

Val Asp Ala Lys Lys Leu Asn Leu Pro Asp Tyr His Lys Ile Ile Lys
35 40 45

Gln Pro Met Asp Met Gly Thr Ile Lys Lys Arg Leu Glu Asn Asn Tyr
50 55 60

Tyr Trp Ser Ala Lys Glu Thr Ile Gln Asp Phe Asn Thr Met Phe Asn
65 70 75 80

Asn Cys Tyr Val Tyr Asn Lys Pro Gly Glu Asp Val Val Val Met Ala
85 90 95

Gln Thr Leu Glu Lys Val Phe Leu Gln Lys Ile Glu Ser Met Pro
100 105 110

<210> 22
<211> 109
<212> PRT
<213> Saccharomyces cerevisiae

<400> 22

Asn Pro Ile Pro Lys His Gln Gln Lys His Ala Leu Leu Ala Ile Lys
1 5 10 15

Ala Val Lys Arg Leu Lys Asp Ala Arg Pro Phe Leu Gln Pro Val Asp
20 25 30

Pro Val Lys Leu Asp Ile Pro Phe Tyr Phe Asn Tyr Ile Lys Arg Pro
35 40 45

Met Asp Leu Ser Thr Ile Glu Arg Lys Leu Asn Val Gly Ala Tyr Glu
50 55 60

Val Pro Glu Gln Ile Thr Glu Asp Phe Asn Leu Met Val Asn Asn Ser
65 70 75 80

Ile Lys Phe Asn Gly Pro Asn Ala Gly Ile Ser Gln Met Ala Arg Asn
85 90 95

Ile Gln Ala Ser Phe Glu Lys His Met Leu Asn Met Pro
100 105

<210> 23
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<212> PRT
<213> Homo sapiens

<400> 23

Lys Lys Gly Lys Leu Ser Glu Gln Leu Lys His Cys Asn Gly Ile Leu
1 5 10 15

Lys Glu Leu Leu Ser Lys Lys His Ala Ala Tyr Ala Trp Pro Phe Tyr
20 25 30

Lys Pro Val Asp Ala Ser Ala Leu Gly Leu His Asp Tyr His Asp Ile
35 40 45

```
Ile Lys His Pro Met Asp Leu Ser Thr Val Lys Arg Lys Met Glu Asn
    50                  55                  60

Arg Asp Tyr Arg Asp Ala Gln Glu Phe Ala Ala Asp Val Arg Leu Met
65                  70                  75                  80

Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Asp Val Val Ala
                85                  90                  95

Met Ala Arg Lys Leu Gln Asp Val Phe Glu Phe Arg Tyr Ala Lys Met
            100                 105                 110

Pro
```

<210> 24
<211> 113
<212> PRT
<213> Homo sapiens

<400> 24

```
Lys Lys Gly Lys Leu Ser Glu His Leu Arg Tyr Cys Asp Ser Ile Leu
1               5                   10                  15

Arg Glu Met Leu Ser Lys Lys His Ala Ala Tyr Ala Trp Pro Phe Tyr
            20                  25                  30

Lys Pro Val Asp Ala Glu Ala Leu Glu Leu His Asp Tyr His Asp Ile
        35                  40                  45

Ile Lys His Pro Met Asp Leu Ser Thr Val Lys Arg Lys Met Asp Gly
    50                  55                  60

Arg Glu Tyr Pro Asp Ala Gln Gly Phe Ala Ala Asp Val Arg Leu Met
65                  70                  75                  80

Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Glu Val Val Ala
                85                  90                  95

Met Ala Arg Lys Leu Gln Asp Val Phe Glu Met Arg Phe Ala Lys Met
            100                 105                 110

Pro
```

<210> 25
<211> 113
<212> PRT
<213> Drosophila melanogaster

<400> 25

```
Asn Lys Glu Lys Leu Ser Asp Ala Leu Lys Ser Cys Asn Glu Ile Leu
1               5                   10                  15

Lys Glu Leu Phe Ser Lys Lys His Ser Gly Tyr Ala Trp Pro Phe Tyr
            20                  25                  30

Lys Pro Val Asp Ala Glu Met Leu Gly Leu His Asp Tyr His Asp Ile
        35                  40                  45

Ile Lys Lys Pro Met Asp Leu Gly Thr Val Lys Arg Lys Met Asp Asn
```

```
    50                  55                  60

Arg Glu Tyr Lys Ser Ala Pro Glu Phe Ala Ala Asp Val Arg Leu Ile
65                  70                  75                  80

Phe Thr Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Asp Val Val Ala
                85                  90                  95

Met Gly Arg Lys Leu Gln Asp Val Phe Glu Met Arg Tyr Ala Asn Ile
            100                 105                 110

Pro
```

<210> 26
<211> 113
<212> PRT
<213> Saccharomyces cerevisiae

<400> 26

```
Lys Ser Lys Arg Leu Gln Gln Ala Met Lys Phe Cys Gln Ser Val Leu
1               5                   10                  15

Lys Glu Leu Met Ala Lys Lys His Ala Ser Tyr Asn Tyr Pro Phe Leu
            20                  25                  30

Glu Pro Val Asp Pro Val Ser Met Asn Leu Pro Thr Tyr Phe Asp Tyr
        35                  40                  45

Val Lys Glu Pro Met Asp Leu Gly Thr Ile Ala Lys Lys Leu Asn Asp
    50                  55                  60

Trp Gln Tyr Gln Thr Met Glu Asp Phe Glu Arg Glu Val Arg Leu Val
65                  70                  75                  80

Phe Lys Asn Cys Tyr Thr Phe Asn Pro Asp Gly Thr Ile Val Asn Met
                85                  90                  95

Met Gly His Arg Leu Glu Glu Val Phe Asn Ser Lys Trp Ala Asp Arg
            100                 105                 110

Pro
```

<210> 27
<211> 108
<212> PRT
<213> Homo sapiens

<400> 27

```
Met Glu Met Gln Leu Thr Pro Phe Leu Ile Leu Leu Arg Lys Thr Leu
1               5                   10                  15

Glu Gln Leu Gln Glu Lys Asp Thr Gly Asn Ile Phe Ser Glu Pro Val
            20                  25                  30

Pro Leu Ser Glu Val Pro Asp Tyr Leu Asp His Ile Lys Lys Pro Met
        35                  40                  45

Asp Phe Phe Thr Met Lys Gln Asn Leu Glu Ala Tyr Arg Tyr Leu Asn
    50                  55                  60
```

```
Phe Asp Asp Phe Glu Glu Asp Phe Asn Leu Ile Val Ser Asn Cys Leu
65                  70                  75                  80

Lys Tyr Asn Ala Lys Asp Thr Ile Phe Tyr Arg Ala Ala Val Arg Leu
                85                  90                  95

Arg Glu Gln Gly Gly Ala Val Val Arg Gln Ala Arg
            100                 105
```

<210> 28
<211> 113
<212> PRT
<213> Homo sapiens

<400> 28

```
Ser Glu Asp Gln Glu Ala Ile Gln Ala Gln Lys Ile Trp Lys Lys Ala
1               5                   10                  15

Ile Met Leu Val Trp Arg Ala Ala Ala Asn His Arg Tyr Ala Asn Val
            20                  25                  30

Phe Leu Gln Pro Val Thr Asp Asp Ile Ala Pro Gly Tyr His Ser Ile
        35                  40                  45

Val Gln Arg Pro Met Asp Leu Ser Thr Ile Lys Lys Asn Ile Glu Asn
    50                  55                  60

Gly Leu Ile Arg Ser Thr Ala Glu Phe Gln Arg Asp Ile Met Leu Met
65                  70                  75                  80

Phe Gln Asn Ala Val Met Tyr Asn Ser Ser Asp His Asp Val Tyr His
                85                  90                  95

Met Ala Val Glu Met Gln Arg Asp Val Leu Glu Gln Ile Gln Gln Phe
            100                 105                 110

Leu
```

<210> 29
<211> 106
<212> PRT
<213> Gallus gallus

<400> 29

```
Asn Leu Pro Thr Val Asp Pro Ile Ala Val Cys His Glu Leu Tyr Asn
1               5                   10                  15

Thr Ile Arg Asp Tyr Lys Asp Glu Gln Gly Arg Leu Leu Cys Glu Leu
            20                  25                  30

Phe Ile Arg Ala Pro Lys Arg Arg Asn Gln Pro Asp Tyr Tyr Glu Val
        35                  40                  45

Val Ser Gln Pro Ile Asp Leu Met Lys Ile Gln Gln Lys Leu Lys Met
    50                  55                  60

Glu Glu Tyr Asp Asp Val Asn Val Leu Thr Ala Asp Phe Gln Leu Leu
65                  70                  75                  80

Phe Asn Asn Ala Lys Ala Tyr Tyr Lys Pro Asp Ser Pro Glu Tyr Lys
```

85 90 95

Ala Ala Cys Lys Leu Trp Glu Leu Tyr Leu
100 105

<210> 30
<211> 112
<212> PRT
<213> Gallus gallus

<400> 30

Ser Ser Pro Gly Tyr Leu Lys Glu Ile Leu Glu Gln Leu Leu Glu Ala
1 5 10 15

Val Ala Val Ala Thr Asn Pro Ser Gly Arg Leu Ile Ser Glu Leu Phe
20 25 30

Gln Lys Leu Pro Ser Lys Val Gln Tyr Pro Asp Tyr Tyr Ala Ile Ile
35 40 45

Lys Glu Pro Ile Asp Leu Lys Thr Ile Ala Gln Arg Ile Gln Asn Gly
50 55 60

Thr Tyr Lys Ser Ile His Ala Met Ala Lys Asp Ile Asp Leu Leu Ala
65 70 75 80

Lys Asn Ala Lys Thr Tyr Asn Glu Pro Gly Ser Gln Val Phe Lys Asp
85 90 95

Ala Asn Ala Ile Lys Lys Ile Phe Asn Met Lys Lys Ala Glu Ile Glu
100 105 110

<210> 31
<211> 112
<212> PRT
<213> Gallus gallus

<400> 31

Thr Ser Phe Met Asp Thr Ser Asn Pro Leu Tyr Gln Leu Tyr Asp Thr
1 5 10 15

Val Arg Ser Cys Arg Asn Asn Gln Gly Gln Leu Ile Ser Glu Pro Phe
20 25 30

Phe Gln Leu Pro Ser Lys Lys Lys Tyr Pro Asp Tyr Tyr Gln Gln Ile
35 40 45

Lys Thr Pro Ile Ser Leu Gln Gln Ile Arg Ala Lys Leu Lys Asn His
50 55 60

Glu Tyr Glu Thr Leu Asp Gln Leu Glu Ala Asp Leu Asn Leu Met Phe
65 70 75 80

Glu Asn Ala Lys Arg Tyr Asn Val Pro Asn Ser Ala Ile Tyr Lys Arg
85 90 95

Val Leu Lys Met Gln Gln Val Met Gln Ala Lys Lys Lys Glu Leu Ala
100 105 110

<210> 32
<211> 113
<212> PRT
<213> Gallus gallus

<400> 32

Ser Lys Lys Asn Met Arg Lys Gln Arg Met Lys Ile Leu Tyr Asn Ala
1 5 10 15

Val Leu Glu Ala Arg Glu Ser Gly Thr Gln Arg Arg Leu Cys Asp Leu
20 25 30

Phe Met Val Lys Pro Ser Lys Lys Asp Tyr Pro Asp Tyr Tyr Lys Ile
35 40 45

Ile Leu Glu Pro Met Asp Leu Lys Met Ile Glu His Asn Ile Arg Asn
50 55 60

Asp Lys Tyr Val Gly Glu Glu Ala Met Ile Asp Asp Met Lys Leu Met
65 70 75 80

Phe Arg Asn Ala Arg His Tyr Asn Glu Glu Gly Ser Gln Val Tyr Asn
85 90 95

Asp Ala His Met Leu Glu Lys Ile Leu Lys Glu Lys Arg Lys Glu Leu
100 105 110

Gly

<210> 33
<211> 115
<212> PRT
<213> Gallus gallus

<400> 33

Lys Lys Ser Lys Tyr Met Thr Pro Met Gln Gln Lys Leu Asn Glu Val
1 5 10 15

Tyr Glu Ala Val Lys Asn Tyr Thr Asp Lys Arg Gly Arg Arg Leu Ser
20 25 30

Ala Ile Phe Leu Arg Leu Pro Ser Arg Ser Glu Leu Pro Asp Tyr Tyr
35 40 45

Ile Thr Ile Lys Lys Pro Val Asp Met Glu Lys Ile Arg Ser His Met
50 55 60

Met Ala Asn Lys Tyr Gln Asp Ile Asp Ser Met Val Glu Asp Phe Val
65 70 75 80

Met Met Phe Asn Asn Ala Cys Thr Tyr Asn Glu Pro Glu Ser Leu Ile
85 90 95

Tyr Lys Asp Ala Leu Val Leu His Lys Val Leu Leu Glu Thr Arg Arg
100 105 110

Glu Ile Glu
115

<210> 34

<211> 112
<212> PRT
<213> Description of unknown organism, see Jeanmougin et al., Trends in Biochem. Sci. 22:151-153 (1997)

<400> 34

His Asn Ala Pro Phe Asp Lys Thr Lys Phe Asp Glu Val Leu Glu Ala
1 5 10 15

Leu Val Gly Leu Lys Asp Asn Glu Gly Asn Pro Phe Asp Asp Ile Phe
20 25 30

Glu Glu Leu Pro Ser Lys Arg Tyr Phe Pro Asp Tyr Tyr Gln Ile Ile
35 40 45

Gln Lys Pro Ile Cys Tyr Lys Met Met Arg Asn Lys Ala Lys Thr Gly
50 55 60

Lys Tyr Leu Ser Met Gly Asp Phe Tyr Asp Asp Ile Arg Leu Met Val
65 70 75 80

Ser Asn Ala Gln Thr Tyr Asn Met Pro Gly Ser Leu Val Tyr Glu Cys
85 90 95

Ser Val Leu Ile Ala Asn Thr Ala Asn Ser Leu Glu Ser Lys Asp Gly
100 105 110

<210> 35
<211> 113
<212> PRT
<213> Description of unknown organism, see Jeanmougin et al., Trends in Biochem. Sci. 22:151-153 (1997)

<400> 35

Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp
1 5 10 15

Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile
20 25 30

Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile
35 40 45

Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys
50 55 60

Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met
65 70 75 80

Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu
85 90 95

Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe
100 105 110

Ser

<210> 36
<211> 113
<212> PRT

<213> Homo sapiens

<400> 36

Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp
1 5 10 15

Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile
20 25 30

Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile
35 40 45

Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys
50 55 60

Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met
65 70 75 80

Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu
85 90 95

Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe
100 105 110

Ser

<210> 37
<211> 114
<212> PRT
<213> Homo sapiens

<400> 37

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp
1 5 10 15

Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu
20 25 30

Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu
35 40 45

Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg
50 55 60

Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu
65 70 75 80

Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Leu Ile Tyr
85 90 95

Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys
100 105 110

Ile Glu

<210> 38
<211> 113
<212> PRT
<213> Gallus gallus

<400> 38

Ser Pro Asn Pro Pro Lys Leu Thr Lys Gln Met Asn Ala Ile Ile Asp
1 5 10 15

Thr Val Ile Asn Tyr Lys Asp Ser Ser Gly Arg Gln Leu Ser Glu Val
20 25 30

Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu Leu
35 40 45

Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg Asn
50 55 60

His Lys Tyr Arg Ser Leu Gly Asp Leu Glu Lys Asp Val Met Leu Leu
65 70 75 80

Cys His Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Gln Ile Tyr Glu
85 90 95

Asp Ser Ile Val Leu Gln Ser Val Phe Lys Ser Ala Arg Gln Lys Ile
100 105 110

Ala

<210> 39
<211> 114
<212> PRT
<213> Gallus gallus

<400> 39

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp
1 5 10 15

Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu
20 25 30

Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu
35 40 45

Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg
50 55 60

Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu
65 70 75 80

Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Val Ser Leu Ile Tyr
85 90 95

Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys
100 105 110

Ile Glu

<210> 40
<211> 105
<212> PRT
<213> Homo sapiens

<400> 40

```
Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu
1               5                  10                  15

Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr
            20                  25                  30

Asp Ser Thr Phe Ser Leu Asp Gln Pro Gly Gly Thr Leu Asp Leu Thr
        35                  40                  45

Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser
    50                  55                  60

Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn
65                  70                  75                  80

Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln
                85                  90                  95

Arg Phe Phe Glu Thr Arg Met Asn Glu
            100                 105
```

<210> 41
<211> 105
<212> PRT
<213> Mus musculus

<400> 41

```
Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu
1               5                  10                  15

Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr
            20                  25                  30

Asp Ser Thr Phe Ser Met Glu Gln Pro Gly Gly Thr Leu Asp Leu Thr
        35                  40                  45

Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser
    50                  55                  60

Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn
65                  70                  75                  80

Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln
                85                  90                  95

Arg Phe Phe Glu Thr Arg Met Asn Asp
            100                 105
```

<210> 42
<211> 108
<212> PRT
<213> Mus sp.

<400> 42

```
Thr Lys Leu Thr Pro Ile Asp Lys Arg Lys Cys Glu Arg Leu Leu Leu
1               5                  10                  15

Phe Leu Tyr Cys His Glu Met Ser Leu Ala Phe Gln Asp Pro Val Pro
            20                  25                  30
```

```
Leu Thr Val Pro Asp Tyr Tyr Lys Ile Ile Lys Asn Pro Met Asp Leu
        35                  40                  45

Ser Thr Ile Lys Lys Arg Leu Gln Glu Asp Tyr Cys Met Tyr Thr Lys
    50                  55                  60

Pro Glu Asp Phe Val Ala Asp Phe Arg Leu Ile Phe Gln Asn Cys Ala
65                  70                  75                  80

Glu Phe Asn Glu Pro Asp Ser Glu Val Ala Asn Ala Gly Ile Lys Leu
                85                  90                  95

Glu Ser Tyr Phe Glu Glu Leu Leu Lys Asn Leu Tyr
            100                 105


<210>  43
<211>  18
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  synthetic bromodomain peptide

<220>
<221>  Xaa
<222>  (1)..(1)
<223>  Xaa can be any single amino acid

<220>
<221>  Xaa
<222>  (2)..(2)
<223>  Xaa can be any single amino acid

<220>
<221>  Xaa
<222>  (4)..(6)
<223>  Xaa is a maximum of three amino acids. Each of these
         can be any amino acid. One may be missing.

<220>
<221>  Xaa
<222>  (6)..(13)
<223>  Xaa is a maximum of eight amino acids. Each of these
         can be any amino acid. One, two, or three may be missing.


<220>
<221>  Xaa
<222>  (7)..(7)
<223>  Xaa is a single amino acid that can be Pro, Lys, or His.


<220>
<221>  Xaa
<222>  (8)..(8)
<223>  Xaa is a single amino acid that can be any amino acid.


<220>
<221>  Xaa
<222>  (10)..(10)
<223>  Xaa is a single amino acid that can be a Tyr, Phe, or His.
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<220>
<221> Xaa
<222> (11)..(15)
<223> Xaa is any amino acid.

<220>
<221> Xaa
<222> (17)..(17)
<223> Xaa is a single amino acid that can be Met, Ile, or Val.

<400> 43

Xaa Xaa Phe Xaa Pro Xaa Xaa Xaa Tyr Xaa Xaa Xaa Xaa Xaa Xaa Pro Xaa Asp
1 5 10 15

<210> 44
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic bromodomain peptide

<400> 44

Trp Pro Phe Met Glu Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr
1 5 10 15

Glu Val Ile Arg
20